



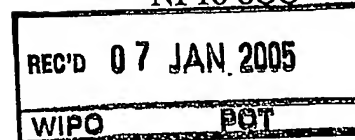
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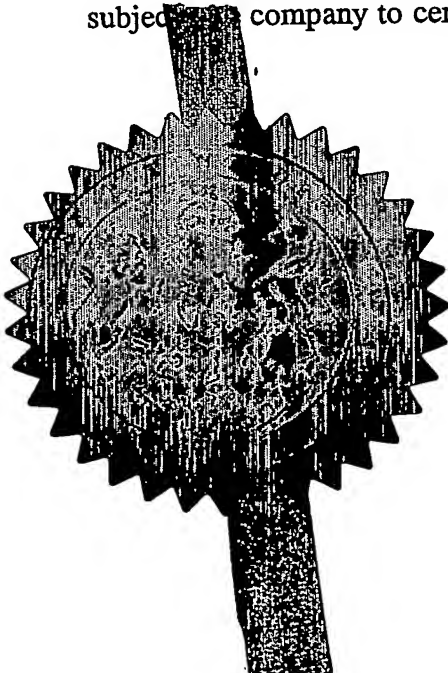


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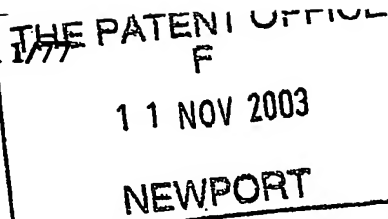


Signed

*Stephen Hordley*

Dated 30 November 2004

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11NOV03 0851079-3 000333

P01/7700 0.00-0326208.6 The Patent Office

# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

Cardiff Road  
Newport  
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NP10 8QQ

1. Your reference

RRS/8628

2. Patent application number

(The Patent Office will fill this part in)

0326208.6

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Keith Froggatt  
Birchwoodmoor, Roston, Ashbourne, Derbyshire, DE6 2EH,  
United Kingdom

Patents ADP number (if you know it)

1069202003

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

Shower Head Assembly

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Swindell & Pearson  
48 Friar Gate  
Derby  
DE1 1GY

Patents ADP number (if you know it)

00001578001✓

6. Priority: Complete this section if you are declaring priority from one or more earlier patent applications, filed in the last 12 months.

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. Divisionals, etc: Complete this section only if this application is a divisional application or resulted from an entitlement dispute (see note d)

Number of earlier UK application

Date of filing  
(day / month / year)

8. Is a Patents Form 7/77 (Statement of inventorship and of right to grant of a patent) required in support of this request?

NO

Answer YES if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

Otherwise answer NO (See note d)

# Patents Form 1/77

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form 0

Description 5

Claim(s) 0

Abstract 0

Drawing(s) 1

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for a preliminary examination and search (Patents Form 9/77)

Request for a substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Swindell & Pearson

Date 10/11/03

Signature(s)

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

R. R. Sales, 01332 367051

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## Notes

a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.

b) Write your answers in capital letters using black ink or you may type them.

c) If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.

d) If you have answered YES in part 8, a Patents Form 7/77 will need to be filed.

e) Once you have filled in the form you must remember to sign and date it.

f) Part 7 should only be completed when a divisional application is being made under section 15(4), or when an application is being made under section 8(3), 12(6) or 37(4) following an entitlement dispute. By completing part 7 you are requesting that this application takes the same filing date as an earlier UK application. If you want the new application to have the same priority date(s) as the earlier UK application, you should also complete part 6 with the priority details.

Patents Form 1/77

### Shower Head Assembly

This invention concerns improvements in or relating to shower head  
5 assemblies.

Problems can be encountered in water systems where water stands for  
a significant time. Bacteria and especially legionella may grow and multiply in  
such water as it stagnates, and particularly if the water has been warmed.  
10 Showers can present a particular danger in this regard, in that water from a  
shower can be breathed in and/or ingested. In establishments such as hotels,  
hospitals or workplaces, showers may not be used for some time, and thus a  
build up of bacteria could occur.

15 According to the present invention there is provided a shower head  
assembly, the assembly including a hollow body through which water passes  
in use, and one or more decontaminating members restrainably located within  
the body and freely movable therein, the or each decontaminating member  
having an outer surface of an antibacterial material.

20

The shower head assembly is preferably arranged such that when no  
water is passing therethrough the decontaminating member or members will  
locate in a lowermost part or parts of the hollow body.

25

The antibacterial material may comprise silver or a silver compound.

The decontaminating member or members may have a coating of  
antibacterial material. The decontaminating member or members may be any  
of spherical, oval, cuboidal, or be in the form of lengths of strip. The  
30 decontaminating member or members may have a contoured surface, which  
may include projections which may be in the form of spikes.

The decontaminating member or members may be formed from material in the form of a mesh, which may be formed into a required shape.

5 The decontaminating member or members may be made of any of copper, steel, plastics material or silver.

10 The decontaminating member or members may be solid or hollow. One or more passages may be provided through the decontaminating member or members, with the surfaces of the passages being formed by an antibacterial material.

15 Filter means may be provided in an upstream part of the shower head assembly to prevent the decontaminating member or members passing upstream beyond the filter means. The filter means may be coated or made from antibacterial material. The filter means may be substantially planar, generally spherical or perhaps generally frusto conical.

20 The shower head assembly may include a spray member defining a plurality of outlets through which water passes to provide a spray, and the spray member may have an outer surface of an antibacterial material.

The spray member may be coated with an antibacterial material or made of an antibacterial material.

25 The hollow body may be made of plastics material.

30 The invention at least of a lower part in use of the hollow body may be provided with a layer of antibacterial material. The layer may be provided by an insert located in the hollow body. Alternatively the layer may be provided by a coating of antibacterial material on the interior of the hollow body.

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Embodiments of the present invention will now be described by way of example only and with reference to the accompanying drawings in which:-

Fig. 1 is a diagrammatic cross sectional side view of a first shower head arrangement according to the invention; and

Fig. 2 is a similar view but of a second shower head arrangement according to the invention.

Fig. 1 shows a shower head arrangement 10 with a shower head 12 of a generally trumpet shape. The head 12 points downwardly in use and connects to a U-shaped section of pipe 14. A mesh screen 16 is provided at the upstream end of the pipe 14, and the screen 16 is made of a silver coated mesh. The pipe 14 connects to a water supply 18. Located within the head 12 are a plurality of silver coated decontaminating members 20, in the form of silver coated spheres or ovals.

In use, water will pass from the supply 18 through the screen 16 into the pipe 14, and pass into the head 12 passing over the spheres 20. The water will pass out of a plurality of openings (not shown) in the head 12 to provide a water spray. When the water is turned off, any residual water is likely to collect in the lower part of the head 12 or perhaps the far end of the pipe 14. This stagnant water will be in contact with the antibacterial screen 16 or decontaminating members 20 thereby to substantially prevent growth of bacteria.

Fig. 2 shows a further arrangement 22 with a shower head 24 made of plastics material. The shower head 24 has a cubic head portion 26 from which an inclined handle portion 28 extends. The handle 28 can connect to a water supply 30. A silver coated mesh screen 32 is provided extending across the upstream end of the handle portion 28. A plurality of

decontaminating members 34 in the form of different shaped silver coated members are provided in the head portion 26.

5 In use, water passes from the supply 30 through the screen 32 and along the handle portion 28 to enter the head portion 26. Water passes over the decontaminating member 34 and out through a plurality of openings (not shown) in the head portion 24 to provide a spray. When the water supply 30 is turned off, any residual water will tend to gather in the head portion 26 or at the upstream end of the handle portion 28. The residual water will there be  
10 contact respectively with either the decontaminating members 34 or the screen 32, to substantially prevent bacterial growth.

There are thus described shower heads which substantially prevent the growth of bacteria, even if they are not used for some time. Providing the  
15 freely movable decontaminating members means that irrespective of the orientation of the respective showerhead, the decontaminating members will tend to locate in the lowermost part or parts thereof which is where any residual water will gather. The mesh screens prevent any bacteria growth at the connection to a water supply, where again water may remain following  
20 use.

Various modifications may be made without departing from the scope of the invention. For instance, a different antibacterial material may be provided on the decontaminating members and/or screens. Such a material  
25 may be a silver compound. The screens could take a different form, and may be substantially planar, or may extend to a significant degree in three dimensions and could for example be frusto conical or spherical.

The decontaminating members may take a number of different shapes.  
30 As well as being spherical or oval, they could be cuboidal or could include lengths of strip. The surface of the decontaminate members may be contoured, and could include projections which may be in the form of spikes.

The decontaminating members may be made of mesh, which may be silver coated, and may be shaped as required into a particular shape such as a sphere or oval.

5

The decontaminating members may have a coating of antibacterial material and could be formed from copper, steel or plastics material. Alternatively, it may be possible to use solid antibacterial material. The decontaminating members may be solid or hollow, and one or more passages may be provided therethrough with the surfaces of the passages being formed by an antibacterial material. With this arrangement this would ensure that some antibacterial material remains, even where coatings on the decontaminating members may eventually be abraded away.

10

15

A spray member may be provided on the shower head which defines outlets through which water passes. The spray member may have an outer surface of an antibacterial material, which may be in the form of a coating or the spray member may be made of an antibacterial material.

20

An antibacterial layer may be provided on the interior of at least a lower part in use of the shower head. The layer may be provided as a coating, or could for instance be provided as an insert which locates in the shower head, for plastics material shower heads.

25

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

30



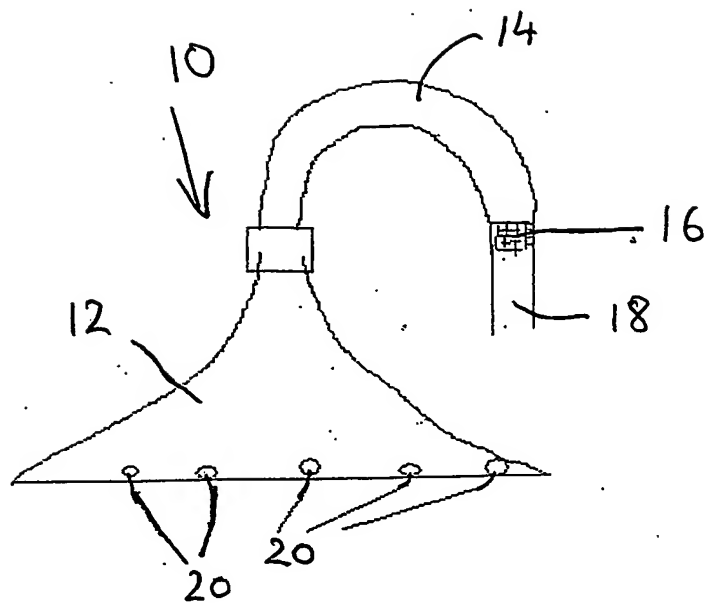


Fig 1

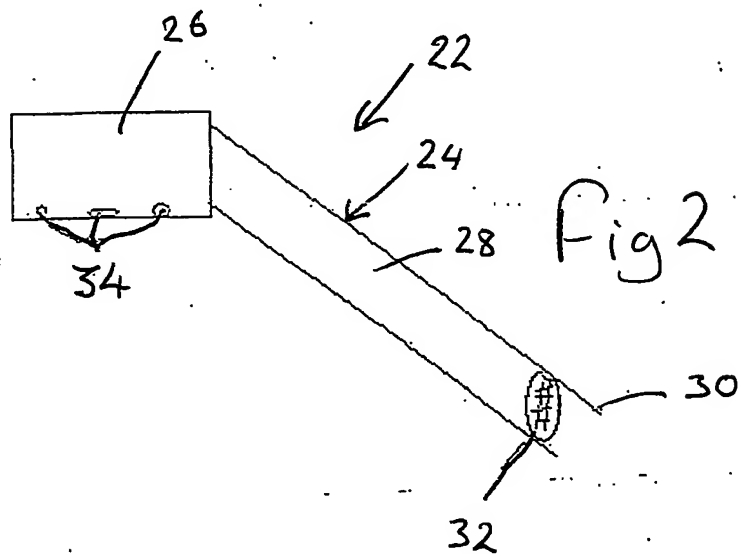


Fig 2

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